

ED_0005450nsDrive_00000120

Expanded EPACT Program

An Update

January 7, 2008

Base EPA Act Program Design

- Tier 2 fuel effects (RVP, T50, T90, Arom, EtOH)
- “GHG Pilot” to precede main program
 - Three additional, in-use E0, E10, E15 fuels tested in all 19 vehicles at 75°F and 50°F
 - GHG testing from early April till end of June, 2008
- 16 fuels, 19 vehicles in main program
- Estimated cost (Dec. 20, 2007): **Ex. 4 - CBI** vs. previous EPA estimate of **Ex. 4 - CBI**
 - Discussions underway with SWRI to reduce program cost
- Base Program Timeline, w/o safety margin
 - Jan. 2008 – March 2008: Fuel blending, vehicle recruiting
 - April 2008 – December 2008: Emissions testing
 - December 2008 – February 2009: Reporting
- The Base Program is already moving forward

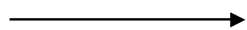
Expanded EPA Act Program

- \$0.9M has been made available to NREL from DOE's Biomass Program for use in expanding the EPA Act Study
 - NREL has already received a funding letter from DOE for this amount
- Additional \$1.1M is expected to become available shortly from DOE's Vehicle Technology Program
- Expanded fuel matrix consists of the following 29 fuels:
 - Base fuel matrix (16 + 3 fuels)
 - Nine additional E15 and E20 fuels, E85 fuel
- DOE would like to test three high emitters for a total of 22 vehicles
- The add-on cost of the DOE component is estimated at \$2.0M
- Expanded Program Timeline, w/o safety margin
 - Jan. 2008 – May 2008: Fuel blending
 - April 2008 – April 2009: Emissions testing
 - May 2009 – July 2009: Reporting

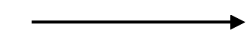
Test Fuel Matrix

Fuel#	T50	T90	ETOH	RP	ARO
	°F	°F	%	psi	%
1	25	30	10	7	15
2	25	30	0	9	15
3	15	30	10	9	15
4	15	30	0	7	40
5	15	30	10	7	40
6	25	30	0	7	40
7	25	30	10	7	15
8	25	30	10	9	15
9	25	30	0	9	40
10	25	30	0	7	15
11	25	30	10	9	40
12	25	30	10	7	40
13	15	30	0	7	15
14	15	30	0	9	15
15	25	30	10	9	40
16	15	30	0	9	40
17	25	35	0	9	30
18	20	35	10	9	25
19	15	35	15	9	25
20	10	30	20	7	15
21	10	30	15	7	15
22	10	30	20	7	40
23	10	30	20	9	40
24	10	30	20	9	15
25	15	30	15	7	15
26	10	30	15	9	40
27	15	30	15	9	40
28	10	30	20	9	40
29	TED	TED	85	TED	TED

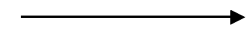
Base
Program
(1-16)



GHG
Subset (17-
19)



Expand
ed
Progra
m (20-
29)



E85



Expanded EPAAct Program *(Cont'd)*

- Next Steps
 - In collaboration with NREL, finalize the design of the expanded EPAAct Program
 - A meeting with NREL is scheduled in Ann Arbor on January 8
 - Coordinate with SWRI, NREL and Halterman to make sure that test fuels are blended on time
 - Coordinate with SWRI and NREL to make sure that the test program is launched on time and each of its three phases completed according to schedule
 - Set up a joint EPA/NREL program oversight system to ensure that test data generated is of required quality

Expanded EPA Act Program (Cont'd)

- DOE also wants to consider the following:
 - Limited 20°F tests
 - Limited 100°F tests
 - Up to three intermediate (e.g. 75k) mileage vehicles
 - Limited PM speciation
- DOE component of EPA Act Program will be defined once the final amount is known
- If the additional \$1.1M does not become available, then:
 - The proposed fuel matrix expansion will not be possible
 - 9 fuels must be tested or none
 - The DOE component will be selected from among the following:
 - Limited number of additional fuels (e.g. E15, E20 or E85)
 - Additional high emitter and/or intermediate mileage vehicles
 - Limited 20°F and/or 100°F tests
 - Limited PM speciation